

On the lack of reconstruction effects: interaction of late-adjunction, linearization, and semantic interpretation

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1. Introduction

In linguistic theory, reconstruction phenomena are good indications of the syntactic process of movement and have received extensive discussions in the literature. One of the well discussed observations is different behaviors of argument and adjunct with respect to the availability of reconstruction effects (see Lebeaux 1988, 1991, Chomsky 1995, 2004, van Riemsdijk & Williams 1981, Epstein et al. 1998, Fox 1999, 2000, Heycock 1995, Hicks 2009, Huang 1993, among others). Although not fully agreed upon, the general tendency is that when an R-expression occurs within an adjunct, its interaction with a coreferential pronoun that appears outside the adjunct is less restricted, compared with the case in which an R-expression occurs (with)in an argument position. A good illustration of the asymmetry under consideration may be provided by the contrast in grammaticality between the following sentences, taken from Lebeaux (1991).

- (1) a. [Which pictures near John_i] did he_i look at?
b. ?*[Which pictures of John_i] did he_i like?

If in (b) the object position of *like* were occupied by a copy of the *wh*-moved phrase *which pictures of John*, then *John* would be c-commanded by *he* and excluded by the Binding Condition (C), a typical case of reconstruction effects as instantiated by (1a). But its fully grammatical status shows that this is not the case. What differentiates (1a) from (1b) is that in the former the R-expression occurs within an adjunct (*near John*) modifying the *wh*-expression *which pictures* whereas in the latter it appears as an argument of the nominal head of the *wh*-phrase.

* During the preparation of this paper I have benefited from the discussions with Mitsunori Ikeda and Toru Suzuki, to whom I would like to express my gratitude. The research that this paper is part of is supported by Japan Society for the Promotion of Science.

Given the contrast, Lebeaux argues from θ -theoretic considerations that unlike arguments, adjuncts can be introduced into the relevant syntactic object counter-cyclically, or simply, “late-merged” or “late-adjoined,” whereas Chomsky (2004), maintaining cyclic operations, pursues a different approach where cyclically introduced adjuncts stay on a “plane” separate from the “primary plane” where their hosts reside and hence a violation of the Binding Condition (C) does not arise insofar as an R-expression and a pronoun remain in different “planes.”

A similar argument/adjunct asymmetry with respect to the Binding Condition (C) is pervasively available in Japanese as well. Thus, Saito (1985) observes (2a) is grammatical whereas (2b) is not. (For ditransitive configurations, see Nemoto 1993).

- (2) a. [Mary-ga John-ni okutta tegami-o] kare-ga mada [t] yonde inai (koto)¹
Mary-NOM John-DAT sent letter-ACC he-NOM yet read not fact
 ‘The letter Mary sent John, he has not yet read.’
 b. ?*[Masao-no hahaoya-o] kare-ga [t] aisiteiru (koto)
Masao-NOM mother-ACC he-NOM love fact
 ‘Masao’s mother, he loves.’

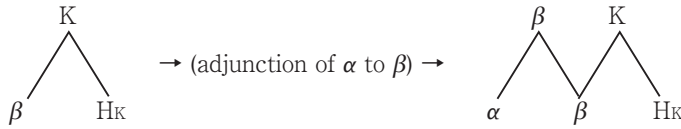
In (2a), the base-generated object position of the phrase preposed by scrambling is c-commanded by *kare* ‘he’ in the subject position; however, *John*, coreferential with *kare*, does not give rise to a Binding Condition (C) violation because it is contained within an adjunct, relative clause. In (2b), on the other hand, *Masao* is an argument of a nominal head *hahaoya* ‘mother’ in the sense that such a relational lexical item has a “relation slot” in its lexical semantic representation: being a mother of *x*. Hence, the R-expression *Masao* is present (in the sense of Lebeaux) or visible (in the sense of Chomsky) within the complement position of *aisiteiru* ‘love,’ leading to a violation of the Binding Condition (C).

This paper explores further characteristics of adjunction structures with respect to reconstruction phenomena; specifically, a new type of data is presented which resists the above-mentioned analyses of the lack of the Condition (C) type violation in adjunction

¹ Following the general practice, *koto* ‘the fact that’ is added to some of the example sentences to avoid the unnaturalness resulting from the lack of a topic, though its translation is omitted in the glosses of these example sentences.

On the lack of reconstruction effects: interaction of late-adjunction, linearization, and semantic interpretation configurations. The unexpected behavior of the new data is argued to be derived from the nature of late-adjunction structure (which means that a late-adjunction approach of Lebeaux-type is adopted in this paper) coupled with a modification of Chomsky’s (2007, 2008) “parallel probing” analysis of phase-head-induced Internal Merge operations. Two claims to be made in this paper are the following.

- (3) Late adjunction creates a double-rooted structures, which cannot be linearized in the PF-side component unless the adjunction structure undergoes further cyclic Merge and, at the same time, the original adjunction structure gets deleted before Linealization applies.



- (4) Of the two copies created by “parallel probing,” namely, one in Spec-C/ v^* and the other in Spec-T/V, either one must be deleted in the semantic interpretation component.

The paper is organized as follows. In section 2, a new type of data is presented that requires reconsideration of the Lebeaux/Chomsky approaches to the lack of the Condition (C) type reconstruction effects in adjunction configurations. An alternative account of the fact to be presented in this paper consists of two components: (3) and (4). (3) is dealt with in section 3, while (4) is discussed in section 4. Section 5 applies our analysis to the lack of reconstruction effects in Antecedent-Contained Deletion constructions discussed by Fiengo and May (1994) and Fox (1999, 2000). Section 6 concludes the paper.

2. New data

As we saw in (2a), an R-expression contained within a relative clause may be coreferential with a pronoun in the subject position when the phrase containing it undergoes movement from a position c-commanded by the pronoun to a position outside of its c-command domain. (6a) is another example with such a syntactic configuration.

- (6) a. [Mary-ga Masao-ni okutta syoozooga-o] kare-ga totemo [t] kiniitta.
Mary-NOM Masao-DAT gave portrait-ACC he-NOM very liked
 ‘The portrait Mary gave to Masao, he liked very much.’

- b. *[Mary-ga kaita Masao_i-no syoozooga-o] kare_i-ga totemo [t] kiniitta.

Mary-NOM drew Masa-GEN portrait-ACC he-NOM very liked

‘The portrait of Masao that Mary drew, he liked very much.’

The fully grammatical status of (6a) contrasts sharply with the ungrammaticality of (6b), where a coreferential interpretation of *Masao* and *kare* ‘he’ is never available because *Masao*, the argument of the nominal head *syoozooga* ‘portrait’ of the scrambled object, is obligatorily generated within the complement position of the verb *kiniitta* ‘liked,’ in violation of the Binding Condition (C).

This account of the ungrammaticality of (6b) is supported by the grammatical status of examples such as (7), where an anaphoric element *zibunzisin* appears in place of an offending R-expression.

- (7) [Mary-ga kaita zibunzisin_i-no syoozooga-o] kare_i-ga totemo [t] kiniitta.

Mary-NOM drew self-GEN portrait-ACC he-NOM very liked

‘The portrait of himself that Mary drew, he liked very much.’

With this much in mind, let us look at the example in (8), which is a combination of examples (6a) and (7) in the sense that an R-expression coreferential with the matrix subject appears in a relative clause and an anaphor also coreferential with the subject appears as a complement to the nominal head whose projection undergoes scrambling.

- (8) *[Mary-ga Masao_i-ni okutta zibunzisin_i-no syoozooga-o] kare_i-ga totemo [t]

Mary-NOM Masao-DAT gave self-GEN portrait-ACC he-NOM very

kiniitta.

liked

‘The portrait of himself that Mary gave to John, he liked very much.’

Interestingly, a coreferential interpretation of *Masao* (R-expression), *zibunzisin* (anaphor), and *kare* (pronoun) is not available at all.

Under the late adjunction approach of the type advocated by Lebeaux (1988, 1991), the following derivation would be available for sentence (8), where OBJ₁ first undergoes short Scrambling to the outer Spec of *v* (OBJ₂) and then middle Scrambling moves it to the sentence

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 initial position (OBJ₃) whereas the subject *kare*, indicated by *he*, first merges with *v* (*he*₁) and raises to Spec-T (*he*₂).

- (9) [TP OBJ₃ [TP *he*₂ [TP [vP OBJ₂ [vP *he*₁ [vP [vP OBJ₁ [v liked]] *v*]]] T]]]

Here, OBJ₁ is *zibunzisin-no syoozooga* ‘the portrait of himself.’ The anaphor contained within OBJ₁ may be interpreted as coreferential with *he*₁ because it is c-commanded by the latter in the *v*P-phase cycle. The relative clause containing *Masao* is late-adjoined to OBJ₂ in the *v*P-phase cycle or, possibly, to OBJ₃ in the CP-phase cycle. In either case, *Masao* is not c-commanded by any coreferential element. Therefore, a coreferential interpretation of *Masao*, *zibunzisin*, and *kare* is expected, contrary to fact, under the late-adjunction analysis.

Chomsky’s (2004) “separate plane” approach does not exclude (8) as ungrammatical, either. In this approach, the relative clause is already adjoined to OBJ₁, which is represented by <OBJ, REL> below for expository purposes.

- (10) [TP <OBJ, REL>₃ [TP *he*₂ [TP [vP <OBJ, REL>₂ [vP *he*₁ [vP [vP <OBJ, REL>₁ [v liked]] *v*]]] T]]]

The adjunct must be integrated into the “primary plane” at some point of the derivation by SIMPL, an optional operation contingent on TRANSFER; otherwise, it could not be linearized in the PF-side of the derivation nor would it be properly interpreted in the semantic interpretation component. In (10) it seems that nothing precludes application of SIMPL to <OBJ, REL>₂ or to <OBJ, REL>₃: in either case, the R-expression within REL (*Masao*) is allowed to be coreferential with *he*, contrary to fact.

Before proceeding to an alternative account of the fact, we would like to take a closer look at example (8). One might argue that its ungrammaticality is due to mixture of two different referential systems in a single sentence: *Masao/kare* relation in terms of a pronominal referential system and *kare/zibunzisin* relation in terms of an anaphoric referential system. It seems to be the case that such a mixture of different referential systems leads to degradation. Thus, sentences like (11) are degraded with a coreferential interpretation of *Masao*, *kare*, and *zibunzisin*.

- (11) ?Masaoi-ga [Mary-ga karei-ni okutta zibunzisin-no syoozooga-o] totemo
Masao-NOM Mary-NOM him-DAT gave self-GEN portrait-ACC very
kiniitta koto
liked fact
 'Masao liked the portrait of himself that Mary gave him very much.'

The degree of degradation, however, is not so severe, compared with that of (8).

A similar behavior is found with another type of anaphor: *zibun* 'self.' Thus, given (6a) (repeated here as (12a)) and (12b), (13a) would be expected to be fully grammatical under the late adjunction or "separate plane" analyses but it in fact is severely degraded, contrasting with the mild degradation in example (13b).²

- (12) a. [Mary-ga Masaoi-ni okutta syoozooga-o] karei-ga totemo [t] kiniitta.
Mary-NOM Masao-DAT gave portrait-ACC he-NOM very liked
 'The portrait Mary gave to Masao, he liked very much.'
- b. [Mary-ga kaita zibun-no syoozooga-o] karei-ga totemo [t] kiniitta.
Mary-NOM drew self-GEN portrait-ACC he-NOM very liked
 'The portrait of himself that Mary drew, he liked very much.'
- (13) a. *[Mary-ga Masaoi-ni okutta zibun-no syoozooga-o] karei-ga totemo [t]
Mary-NOM Masao-DAT gave self-GEN portrait-ACC he-NOM very
kiniitta.
liked
 'The portrait of himself that Mary gave to John, he liked very much.'

² Unlike *zibunzisin* and *zibun*, *karezisin* 'himself' sounds natural in the syntactic configuration comparable to (8) and (13a):

- (i) [Mary-ga Masaoi-ni okutta karezisin-no syoozooga-o] karei-ga totemo [t] kiniitta.
Mary-NOM Masao-DAT gave himself-GEN portrait-ACC he-NOM very liked
 'The portrait of himself that Mary gave to Masao, he liked very much.'

The reason seems to be that *karezisin* can directly pick up *Masao* as its antecedent, which is an option unavailable to anaphors like *zibunzisin* and *zibun* that require strict c-command configurations for anaphoric dependence. This line of approach might receive support from the grammatical status of the following example.

- (ii) Mary-ga Masaoi-ni karezisin-no syoozooga-o okutta koto.
Mary-NOM Masao-DAT himself-GEN portrait-ACC gave fact
 'Mary gave Masao a portrait of himself.'

- b. ??Masao-ga [Mary-ga kare-i-ni okutta zibun-no syoozooga-o] totemo
Masao-NOM Mary-NOM him-DAT gave self-GEN portrait-ACC very
kiniitta koto
liked fact
 ‘Masao liked the portrait of himself that Mary gave him very much.’

Just like reflexives, reciprocal *tagai* ‘each other’ seems to have a similar behavior. (14a) allows coreference of *Taro to Jiro* and *karera*, indicating the lack of reconstruction effects in adjunction structures, whereas (14b) shows that *tagai*, embedded within the scrambled object, may be coreferential with the pronoun in the subject position, indicating reconstruction effects with respect to the Binding Condition (A). Given these examples, (15a) would be expected to be grammatical. However, it sounds degraded to the author, contrasting with (15b), which is better.³

- (14) a. [Mary-ga [Taro to Jiro]-i-no atorie-de kaita syoozooga-o] karera-ga
Mary-NOM Taro and Jiro-GEN ateliers-in drew portrait-ACC they-NOM
[t] hihyoo.siatta koto
commented fact
 ‘The portraits that Mary drew in Taro and Jiro’s ateliers, they made some comments on.’
 b. [Mary-ga kaita tagai-no syoozooga-o] karera-ga [t] hihyoo.siatta
Mary-NOM drew each.other-GEN portraits they-NOM commented
koto
fact
 ‘The portraits of each other that Mary drew, they made some comments on.’
 (15) a. *[Mary-ga [Taro to Jiro]-i-no atorie-de kaita tagai-no syoozooga-o]
Mary-NOM Taro and Jiro-GEN ateliers-in drew each.other-GEN portraits-ACC
karera-ga [t] hihyoo.siatta koto
they-NOM commented fact
 ‘The portraits of each other that Mary drew in Taro and Jiro’s ateliers, they made some comments on.’

³ It seems that those speakers who find (15a) good also judge (i) as good.

(i) Mary-ga [Taro to Jiro]-no atorie-de tagai-no syoozooga-o kaita koto
Mary-NOM Taro and Jiro-GEN ateliers-in each.other-GEN portraits-ACC drew fact
 ‘Mary drew each other’s portraits in Taro and Jiro’s ateliers.’

- b. [Taro to Jiro] *-ga* [Mary-*ga* karera-*no* atorie-*de* kaita tagai-*no*
Taro and Jiro-NOM Mary-NOM their-GEN ateliers-in drew each.other-GEN
 syoozooga-o] *hihyoo.siatta koto*
portraits-ACC commented fact
 ‘Taro and Jiro made some comments on the portraits of each other that Mary drew
 in their ateliers.

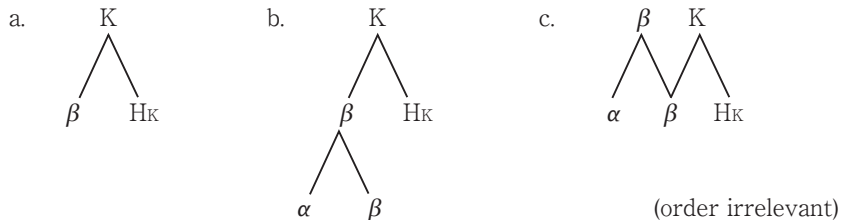
To summarize the discussion, the referential property of examples (8) and (13a) poses a problem to the Lebeaux/Chomsky type approach to the lack of reconstruction effects in adjunction configurations. To account for these data, I would like to first reconsider the nature of late adjunction in the next section.

3. Linealization of late-adjunction structures

Adjunction has been extensively discussed for three different but intricately connected reasons: linealization on the PF-side of the derivation, interpretation on the LF-side, and “extendedness” in the narrow syntax. In this paper I would like to assume that (not only adjunction but also) counter-cyclic adjunction (namely, late-adjunction) is permitted insofar as a phase-boundary is not crossed (the Phase-Impenetrability Condition). Suppose that α is late-adjoined to a constituent β that is contained within K as in (16a). β has to project so as to host α , but the resulting structure should not be (16b), because there the relation between H_K and β is changed. (We do not assume a “separate plane” analysis of adjuncts put forth by Chomsky (2004).)

An alternative option for β to host α is to project itself in the way outlined in (16c).

(16) Late adjunction of α to β



If this correlation is real, *tagai* is similar to *karezisin* ‘himself’ (as noted in the previous footnote) for these speakers in the sense that they do not require strict c-command configurations for anaphoric interpretation.

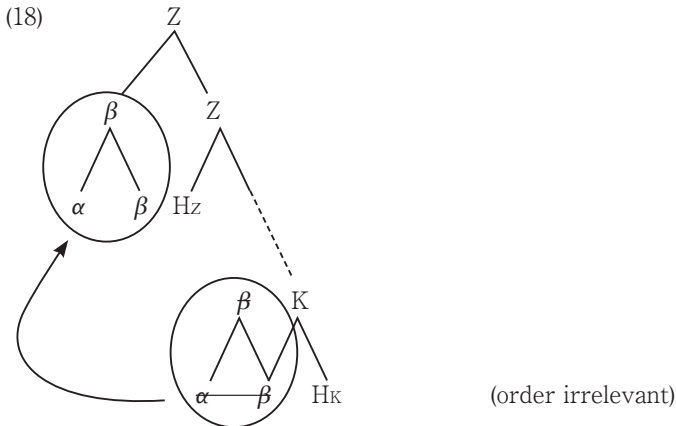
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In (16c), the modification relation between α and β is properly interpreted; and the relation between H_K and β has been kept intact after the late adjunction of α to β . Hence, this type of late-adjunction is licit insofar as interpretation and narrow syntax are concerned.

The derivation outlined in (16c) is independently argued for by Citko (2005), who calls the particular adjunction operation under consideration “Parallel Merge.” She applies it to the account of the derivation for across-the-board *wh*-questions, as in (17), the details of which we will not go into in this paper. Instead, we will consider another consequence of this type of late-adjunction for Binding-Theoretic reconstruction phenomena.

(17) I wonder what Gretel recommended and Hansel read.

As extensively discussed by Citko, late-adjunction structures are not linealizable, insofar as they are visible at the stage of the derivation in the PF component where the operation of Linearization applies (see also Kayne 1994 and Chomsky 2004). They are linearizable, however, if they undergo movement at a later stage of the narrow syntax and their original copies (which are unlinearizable and hence uninterpretable if they reach the sensory-motor interface) get deleted before Linearization applies. The relevant derivation is illustrated in (18), where $[\beta \alpha \beta]$ is raised to Spec-Hz and the original copy is deleted before Linearization.



For our present purposes, then, the following generalization is important.

- (19) Late-adjunction structures must be overtly moved; otherwise they are excluded by Linearization.⁴

Given (19), the late-adjunction site for the relative clause that contains an R-expression coreferential with the matrix subject in (20) cannot be Spec-CP in (21).

- (20) Which claim that John_i made did he_i later deny?

- (21) [_{CP} which claim did [_{TP} he T [_{vP} ~~which claim~~ [_{vP} he v [_{VP} ~~which claim~~ [_{VP} deny ~~which claim~~]]]]]]]

Rather, it is restricted to either Spec-*vP* or Spec-VP in (21) under Chomsky's (2007, 2008) "parallel probing" mechanism for phase-head induced movement. In this particular example, however, late-adjunction to Spec-VP of the relative clause containing *John* is unavailable because in this *vP*-phase-domain *he* is introduced to Spec-*vP*, giving rise to a configuration that violated the Binding Condition (C).⁵ Thus, it is concluded that the late-adjunction under consideration must target the instance of *which claim* that occupies Spec-*vP*.

Bearing this much in mind, let us return to the problematic examples (8) and (13a). (8) is reproduced here as (22). The structural configuration for (22) that concerns us here is (23), which is essentially similar to (21).

- (22) *[Mary-ga Masao-ni okutta zibunzisin-no syoozooga-o] kare-ga totemo [t]
Mary-NOM Masao-DAT gave self-GEN portrait-ACC he-NOM very
kiniitta.
liked

'The portrait of himself that Mary gave to John, he liked very much.'

- (23) [_{CP} [the portrait of himself] [_{TP} he [_{TP} [_{vP} [the portrait of himself] [_{vP} he [_{vP} [_{VP} [the portrait of himself] [_{VP} [_{DP} the portrait of himself] [v liked]]] v]]] T] C]

The relative clause containing *Masao* cannot be late-adjoined to *the portrait of himself* in the outer Spec of TP, because of (19). Nor can it be late-adjoined to the DP in Spec-*vP* or the

⁴ Overt movement is crucial. Covert movement (namely, pronunciation of the "lower" copy) cannot escape the linearization problem.

⁵ For a similar reason, late-adjunction to *which claim* in the complement position of *deny* is also excluded.

On the lack of reconstruction effects: interaction of late-adjunction, linearization, and semantic interpretation complement position of V because of the Binding Condition (C). Therefore, we conclude that the mysterious behavior of sentences such as (22) stems from some property of late-adjunction to Spec-*v*P with respect to the Binding Conditions. Since late-adjunction to Spec-*v*P yields licit interpretation in (21), it is natural to consider that unavailability of late-adjunction to Spec-*v*P in (23) is responsible for the ungrammatical status of the corresponding sentence in (22).

4. Elimination of double chains and an alternative account

The question of why late-adjunction to Spec-*v*P is prohibited in (23) but not in (21) is answered in this section with a modification of Chomsky's (2007, 2008) "parallel probing" mechanism and a base-generation analysis of anaphoric relations advocated by Tomizawa (2003) and Zwart (2002), among others.

In the case of object shift that involves overt movement of object, it is motivated by the features that *v* has: edge-feature and Case/ φ -features. Case/ φ -features are transmitted downward to V. φ -features and edge-feature probe the domain and identify OBJ as their goal. Copies of OBJ are generated in Spec-VP and Spec-*v*P independently of each other.

$$(24) \quad [_{vP} \text{ OBJ}_3 [_{vP} \text{ subject} [_{vP} \text{ } \bar{v} \langle \text{EF, Case, } \varphi \rangle] [_{VP} \text{ OBJ}_2 \quad [_{VP} \quad V_{\langle \text{Case, } \varphi \rangle} \quad \text{OBJ}_1 \rangle]]]]$$

Two chains are created: (OBJ₂, OBJ₁) and (OBJ₃, OBJ₁).

Chomsky (2008) gives a couple of pieces of evidence for the presence of double chains of this sort in the movement configuration motivated by C-head. In (25b), φ -features of T, transmitted from the phase-head C, agrees with *the driver of which car* in the object position of *awarded*; at the same time, the phase-head C agrees with the *wh*-feature that *which car* has, attracting of *which car*.

- (25) a. Of which car was the driver awarded a prize?
 b. $[_{CP} \text{ [of which car]} C_{\langle \text{wh, Case, } \varphi \rangle} \quad [_{TP} \quad \text{[the driver]} \quad T_{\langle \text{Case, } \varphi \rangle} \quad [_{vP} \quad \text{[} v \text{ was]} \quad [_{VP} \text{ [the driver of which car]} \quad [_{VP} \text{ awarded a prize }]]]]]$

The contrast in grammaticality between (26a) and (26b) also shows that in (26a), there are two different chains headed by *who*: one is headed by *who* in Spec-CP and the other, by another instance of *who* in Spec-TP. Otherwise, a weak crossover effect would arise, just as in (26b).

- (26) a. Who_i seems to his_i friends to be preferable.
 b. * Who_i do you seem to his_i friends to prefer.

Double chains of this sort are slightly different from those that concern us in this paper in that both chains are not pronounced. In the configuration (24) above, which is the focus of our discussion, neither OBJ₃ nor OBJ₂ is pronounced because OBJ is scrambled out of the *v*P-domain to a sentential-initial position.

Now I would like to propose a deletion operation that applies in the semantic interpretation component to the double chains created by “parallel probing.”

- (27) The double chains created by “parallel probing” undergo deletion of one of their two component chains in the semantic interpretation component.

As an illustration, example (28a) has the derivation outlined in (28b), where Case/ φ -features on C are transmitted to T, followed by two agreement processes between T_[Case, φ] and the DP in Spec-*v*P, on the one hand, and between C_[*wh*] and the same DP, on the other.

- (28) a. Who saw John?
 b. [CP who₃ C_{[wh,Case, φ]] [TP ~~who~~₂ T_{[Case, φ]] [*v*P who₁ *v* [VP saw John]]]}}

By this “parallel probing,” double chains are generated: (*who*₂, *who*₁) and (*who*₃, *who*₁). The deletion rule in (27), then, requires either of the two chains to be deleted in the semantic interpretation component. Deletion of either chain in example (28b) does not lead to unexpected interpretational anomaly: elimination of (*who*₃, *who*₁), for example, might affect the scope domain of *who* but another copy of it, which appears in Spec-TP in the form of *who*₂, serves as a new scope marker. In example (26a) above, *who* in Spec-TP is required to rescue the relevant derivation from a weak crossover violation; hence, the chain headed by this *wh*-phrase must be kept undeleted in the semantic interpretation component in this particular example.⁶

⁶ In case (25), the double chains created by “parallel probing” are (*of which car*, ~~*of which car*~~) and (*the driver of which car*, ~~*the driver of which car*~~). The chain members are not identical and, hence, these chains are exempted from application of the deletion operation in (27).

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Let us now return to the question of why late-adjunction to Spec-*v*P is prohibited in (23), repeated as (29), but not in (21). Remember the discussion so far that in (23)/(29) late-adjunction of a relative clause that contains an R-expression coreferential with the matrix subject pronoun is restricted to the host DP in Spec-*v*P; late-adjunction to other instances of the DP violates either the Binding Condition (C) or Linealization. The structure for (23)/(29) with a relative clause late-adjoined to the scrambled object in Spec-*v*P, then, is (30).

- (29) **[Mary-ga Masao-ni okutta zibunzisin-no syoozooga-o] kare-i-ga totemo [t] Mary-NOM Masao-DAT gave self-GEN portrait-ACC he-NOM very kiniitta. liked*
- (30) [_{CP} <the portrait of himself, REL> [_{TP} he [_{TP} [_{vP} <~~the portrait of himself~~, REL> [_{vP} he [_{vP} [_{VP} [~~the portrait of himself~~] [_{VP} [_{DP} the portrait of himself] [_v liked]]] *v*]]] T]] C]

In the *v*P-phase, scrambling of the object creates double chains due to feature-transmission from *v* to V: one headed by *the portrait of himself* in Spec-VP and the other by another copy of the DP in Spec-*v*P, which later undergoes late-adjunction of a relative clause.

Either of the chains gets deleted in the semantic interpretation component. Suppose the chain headed by the DP in Spec-*v*P is deleted. Then, the following semantic representation is obtained.

- (31) [_{CP} <the portrait of himself, REL> [_{TP} he [_{TP} [_{vP} <—————, REL> [_{vP} he [_{vP} [_{VP} [~~the portrait of himself~~] [_{VP} [_{DP} ~~the portrait of himself~~] [_v liked]]] *v*]]] T]] C]

Here, the relative clause (REL) has lost its host DP and its modification relation cannot be properly interpreted.

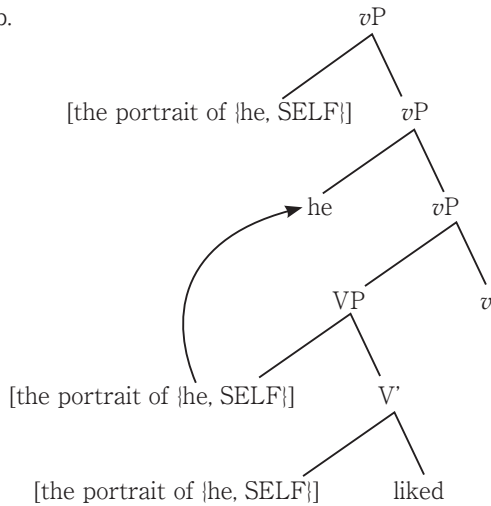
Suppose, then, that the chain headed by the DP in Spec-VP is deleted, which yields the following configuration.

- (32) [_{CP} <the portrait of himself, REL> [_{TP} he [_{TP} [_{vP} <~~the portrait of himself~~, REL> [_{vP} ~~he~~ [_{vP} [_{VP} [—————] [_{VP} [_{DP} ~~the portrait of himself~~] [_v liked]]] *v*]]] T]] C]

This is excluded independently of the nature of late-adjunction, from the derivational property of anaphors. The anaphoric dependence between an anaphor and its antecedent is established as a pair {anaphor, antecedent} prior to the relevant derivation and the anaphor moves out of the pair to raise to a θ -position (see Tomizawa (2003) and Zwart (2002) for details). Thus, in (32), *he* is not directly introduced to Spec-*vP*; rather, it first appears in the complement position of *portrait* with *himself*, as in (33a). After the VP in (33a) merges with *v*, applications of “parallel probing,” movement of *he* to Spec-*vP*, and object scrambling yield (33b).

(33) a. [_{VP} [the portrait of {himself, he}] liked]

b.



Deletion of *the portrait of {he, SELF}* in Spec-VP in the semantic interpretation component makes *he* in Spec-*vP* unconnected to the anaphor *himself* in this example.

To summarize, in example (29), deletion of the chain headed by the DP in Spec-*vP* is prohibited because of the interpretation of the relative clause late-adjoined to it, whereas deletion of the chain headed by the DP in Spec-VP is prohibited for *he* and *himself* to be interpreted as coreferential. Either option is unavailable and, hence, the derivation is ungrammatical.

Unlike (29)/(23), late-adjunction to a host in Spec-*vP* is grammatical in (21), repeated as (34) with some small modification.

(20) Which claim that John_i made did he_i later deny?

(34) [_{CP} <which claim, REL> did [_{TP} he T [_{vP} <~~which claim~~, REL> [_{vP} he v [_{VP} ~~which claim~~ [_{VP} deny ~~which claim~~]]]]]]]

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Of the two chains created by “parallel probing” by v/V , the one headed by the *wh*-phrase in Spec-*vP* cannot be deleted because of the vacant modification of REL that would result from such deletion, but the chain headed by the *wh*-phrase in Spec-VP can without inducing any violation. Hence, the derivation terminates.

5. Lack of reconstruction effects in ACD constructions

In this section I would like to extend our analysis to the lack of reconstruction effects in Antecedent-Contained Deletion constructions, discussed by Fiengo and May (1994) and Fox (1999, 2000), as in (35).

- (35) You sent him_i the letter that $John_i$ expected you would [_{VP} e_i].

In typical ditransitive constructions, the first object (indirect object) asymmetrically c-commands the second object (direct object); hence, the sentence in (35) would be expected to be a violation of the Binding Condition (C) under the coreferential interpretation of *him* and *John*. However, the fact is that it is grammatical. The crucial factor is the presence of an empty VP. A widely accepted view is that empty VPs in ACD constructions move out of the domain of their antecedent VPs for their semantic contents to be properly identified. May (1985), for example, argues that the relevant operation is QR.

We cannot appeal to QR for the lack of a Condition (C) type violation in (35), for two independent reasons. First, under the copy theory of movement, *him* in (35) still c-commands the instance of *John* within the “trace” of the QRed object. Second, QR is an instance of A-bar-movement that does not change the Binding-Theoretic relations that are obtained prior to the movement operation. *Wh*-movement, another instance of A-bar-movement, illustrates the point, as in (36).

- (36) a. * He_i likes this picture of $John_i$.
b. ? * Which pictures of $John_i$ did he_i like ~~which picture of $John_i$~~ ? (=1b)

An alternative analysis I would like to propose is a combination of late-adjunction and extraposition (rightward movement). Consider the matrix verb phrase in (35), where v transmits Case/ ϕ -features to V (*sent*) and the transmitted ϕ -feature agrees with the ϕ -feature on the second object (direct object). Suppose that as a result, the object adjoins to

the (outer) Spec of VP, as in (37a) below. Now that OBJ₂ is outside of the c-command domain of *him*, late-adjunction of a relative clause that contains an R-expression coreferential with *him* can be adjoined to OBJ₂ without inducing a Condition (C) violation, as in (37b). At a later stage of the derivation, the late-adjoined structure <OBJ₂, REL> undergoes extraposition and adjoins to *vP* as in (37c).

- (37) a. [*vP* *v* [*VP* OBJ₂ [*VP* *him* [*VP* sent ~~OBJ~~₁]]]]
 b. [*vP* *v* [*VP* <OBJ₂, REL> [*VP* *him* [*VP* sent ~~OBJ~~₁]]]]
 c. [*vP* [*vP* *v* [*VP* <~~OBJ~~₂, REL> [*VP* *him* [*VP* sent ~~OBJ~~₁]]]] <OBJ₃, REL>]

Because of this (cyclic) extraposition, not only is the late-adjunction structure licitly linearized, but the empty VP (or *vP*) contained within REL has its semantic content properly identified.

6. Conclusion

This paper presents a new type of data that apparently resists the Lebeaux/Chomsky type of analysis of the lack of reconstruction effects with respect to the Binding Condition (C), and proposes an alternative analysis on the basis of late-adjunction and deletion of one of the two chains created by “parallel probing.” Late-adjunction is argued to be licit insofar as the resulting adjunction structure is linearizable. Late-adjunction structure can be linearized if it undergoes overt movement at a later stage of the derivation. Given this late-adjunction mechanism, the deletion operation of either of the chains created by “parallel probing” is crucial in the account of the new data because either chain cannot be deleted without inducing anomaly in either the interpretation of modification relation or the anaphor-antecedent relation.

References

- Chomsky, Noam (1995) *The Minimalist Program*, Cambridge, Mass.: MIT Press.
 Chomsky, Noam (2004) “Beyond explanatory adequacy,” in Adriana Belletti ed., *Structures and Beyond: The Cartography of Syntactic Structures 3*, Oxford: Oxford University Press, 104-131.
 Chomsky, Noam (2007) “Approaching UG from below,” in Uli Sauerland and Hans-Martin Gärtner eds., *Interfaces + Recursion = Language?: Chomsky’s Minimalism and the View from Syntax-Semantics*, Berlin: Mouton de Gruyter, 1-29.
 Chomsky, Noam (2008) “On phases,” in Robert Freidin, Carlos P. Otero, and Maria Luisa

On the lack of reconstruction effects: interaction of late-adjunction, linearization, and semantic interpretation

Zubizarreta eds., *Foundational Issues in Linguistic Theory: Essays in Honor of Jean-Roger Vergnaud*, Cambridge: Mass.: MIT Press, 133-166.

Citko, Barbara (2005) "On the nature of Merge: External Merge, Internal Merge, and Parallel Merge," *Linguistic Inquiry* 36, 475-496.

Epstein, Samuel, Erich M. Groat, Ruriko Kawashima, and Hisatsugu Kitahara (1998) *A Derivational Approach to Syntactic Relations*, New York: Oxford University Press.

Fiengo, Robert and Robert May (1994) *Indices and Identity*, Cambridge, Mass.: MIT. Fox, Danny (1999) "Reconstruction, binding theory, and the interpretation of chains," *Linguistic Inquiry* 30, 157-196.

Fox, Danny (2000) *Economy and Semantic Interpretation*, Cambridge, Mass.: MIT Press. Heycock, Caroline (1995) "Asymmetries in reconstruction," *Linguistic Inquiry* 26, 547-570.

Hicks, Glyn (2009) *The Derivation of Anaphoric Relations*, Amsterdam: John Benjamins. Huang, C.-T. James (1993) "Reconstruction and the structure of VP: Some theoretical consequences," *Linguistic Inquiry* 24, 103-138.

Kayne, Richard (1994) *The Antisymmetry of Syntax*, Cambridge, Mass.: MIT Press. Lebeaux, David (1988) *Language Acquisition and the Form of the Grammar*, Ph.D. dissertation, University of Massachusetts, Amherst.

Lebeaux, David (1991) "Relative clauses, licensing, and the nature of the derivation," in Susan D. Rothstein ed., *Syntax and Semantics 25: Perspectives on Phrase Structure: Heads and Licensing*, San Diego: Academic Press, 209-239.

May, Robert (1985) *Logical Form: Its Structure and Derivation*, Cambridge, Mass.: MIT Press.

Nemoto, Naoko (1993) *Chains and Case Positions: A Study from Scrambling in Japanese*, Ph.D. dissertation, University of Connecticut.

van Riemsdijk, Henk and Edwin Williams (1981) "NP structure," *Linguistic Review* 1, 171-217.

Saito, Mamoru (1985) *Some Asymmetries in Japanese and their Theoretical Implications*, Ph.D. dissertation, MIT.

Tomizawa, Naoto (2003) *Some Concepts and Consequences of the Derivational Computational System*, Ph.D. dissertation, Tohoku University.

Zwart, Jan-Wouter (2002) "Issues relating to a derivational theory of binding," in Samuel David Epstein and T. Daniel Seely eds., *Derivation and Explanation in the Minimalist Program*, Massachusetts: Blackwell, 269-304.

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Abstract

This paper presents a new type of data that apparently resists analyses of the lack of reconstruction effects with respect to the Binding Condition (C) put forth by Lebeaux (1988, 1991) and Chomsky (2004), and proposes an alternative analysis on the basis of late-adjunction and deletion of one of the two chains created by “parallel probing.” Late-adjunction is argued to be licit insofar as the resulting adjunction structure is linearizable. Late-adjunction structure can be linearized if it undergoes overt movement at a later stage of the derivation. Given this late-adjunction mechanism, the deletion operation of either of the chains created by “parallel probing” is crucial in the account of the new data, because either chain cannot be deleted without inducing anomaly in the interpretation of modification relation or the anaphor-antecedent relation. The analysis proposed is also extended to the account of the lack of reconstruction effects in Antecedent-Contained Deletion constructions.